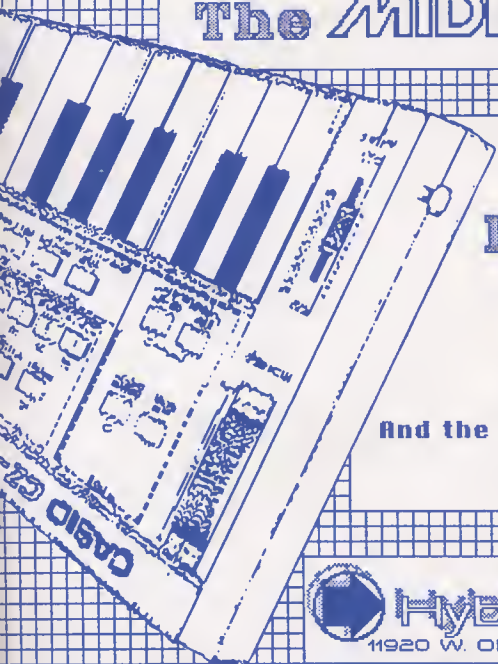# The MIDIMATE™ Series

MIDIPATCH™
For the Casio
CZ series

And the ATARI® Personal Computer

User's Manual

Hybrid Arts Inc.™
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HYBRID ARTS LICENSE AGREEMENT

CZ-Patch for the CASIO CZ Series and the ATARI Personal Computer.
First Edition.
By Alan Hart, Bernard Servolle, Paul Rother, Stefan Daystrom, Bob Moore,
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Special thanks to:
   Julie and Steve Dancz
   Geoff Levin
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Introduction

Congratulations on your selection of Hybrid Arts' CZ-Patch. CZ-Patch is one of the programs designed to work with your Hybrid Arts MIDIMATE interface and is one of the MIDI Patch Series programs for popular synthesizers.

CZ Patch will allow you to store your favorite CZ voices (or patches) onto disk, name them, rearrange them, and recall them from disk at will. The system will allow you to store 16 groups of 16 voices each per disk.

You will be able to load a group of voices into your CZ's memory or individual voices from disk into any desired location in the CZ memory. After developing new voices on your CZ, you will be able to save them to disk in groups of 16 voices or as individual voices.

With your Hybrid Arts MIDIMATE interface box you will gain access to functions and features that will aid both the professional and amateur musician. For more details on our other software products contact:

Hybrid Arts, Inc. 11920 W. Olympic Blvd., Los Angeles, CA 90064.
(213) 826-3777

To learn more about MIDI you can contact the International MIDI Association (IMA) at: 11857 Hartsook St.
North Hollywood, CA 91607
(818) 505-8964

Note: Casio uses the term "tone" to describe a "sound" or "patch", in their instruction manual. We will use the term voice throughout our manual. Likewise a "group" is 16 voices.

System Path Diagram

MIDIMATE

Atari Computer

CASIO BZ-101

MidiPatch System

CZ System

Disk

B0 Disk View

LG, L0
SG
SV
L1

CZ Memory

Internal	Cartridge	Pre-set

L2-L7
LY

AG   BK   SP   SK

B1 Casio View

WRITE

B2 Buffer
B3 Buffer
B4 Buffer
B5 Buffer
B6 Buffer
B7 Buffer

AY TY

CZ Tone Buffer

Sound Generating Circuits
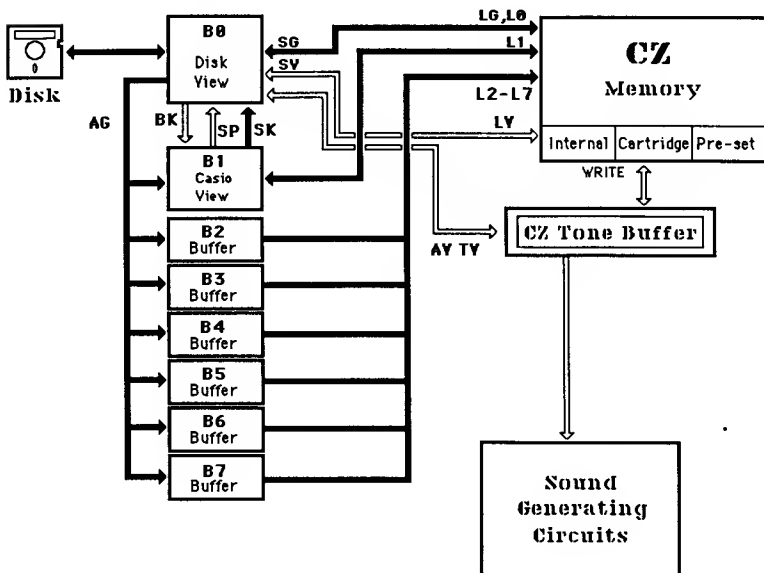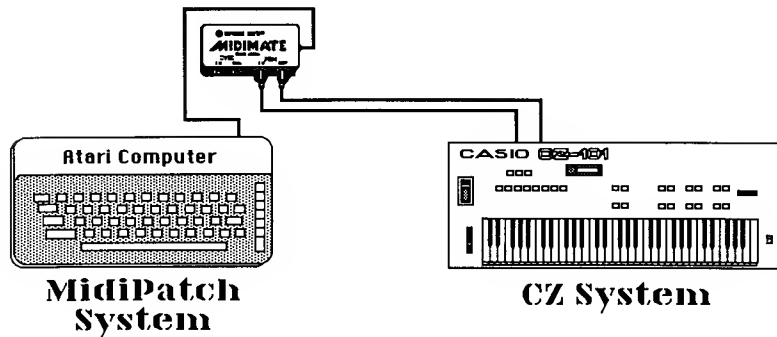
⇐ Voice Path
← Group Path

1. Getting Started

Unpacking

Inside the box you will find one CZ-Patch software diskette, this instruction manual and a warranty and software update registration card. Fill out the card and return to Hybrid Arts as soon as possible so we can let you know of software updates and new products that work with the MIDIMATE interface box. The card will also start your warranty period (see license agreement on page 3).

Setting up.

You must have the following equipment in order to be able to use this product: An Atari computer with at least 48k of RAM (400, 800, 1200, 800XL, 130XE), an Atari (or Atari compatible) single or double density disk drive (Atari 810, 1050, etc.), a CZ keyboard and a MIDIMATE interface box and 2 MIDI cables. A printer is optional and will allow you to print a catalog of the voices stored on your disks. A second disk drive is also optional.

Connect one MIDI cable from the MIDIMATE MIDI OUT jack to the CZ MIDI IN jack. The second cable connects the MIDI OUT of the CZ and the MIDI IN on the MIDIMATE. Connect the MIDIMATE I/O cable to the free I/O port on your disk drive. The other I/O cable (supplied with your disk drive) must be connected between the disk drive and your computer. The computer should also be connected to a video monitor or TV set.

Initializing the CZ

Turn the CZ on and wait a few seconds (until the internal relay clicks). The CZ is now ready for use on MIDI channel #1. For more information on how to operate the CZ see the CZ instruction manual.

Note: The CZ memory protect switch is ignored for MIDI data transfers. Having the protect switch in the ON position will not prevent the internal voices from being erased inadvertently.

Therefore, take extra care, and remember that any CZ-Patch commands starting with the letter L (e.g., "LV", "LG", etc.) will erase one or all internal voices and replace them with new ones.

Loading the Master Disk

Now insert the CZ-Patch diskette and close the drive door and turn the computer on. Make sure there is no cartridge in the cartridge slot.

Atari 800XL and 130XE owners: Before turning on the computer hold the option key down, turn on the computer, and as soon as the disk drive starts loading the disk release the option key. Wait for the busy light to go out. This will disengage your built in Basic ROM.

As soon as the the program is finished loading, the CZ will play the test notes using voice #1 in internal memory and a square cursor will appear in its normal location at the bottom right of the screen.

Note: You cannot update the date on the CZ-Patch master diskette. This is the pre set factory date. You cannot store ("write") sounds to this disk either because it is write protected (the write protect notch is covered). CZ-Patch comes with 8 groups of 16 voices each, intended to be loaded into the CZ only. If you wish to update the date on your master disk and/or store voices to it, you have to remove the write protect tab before attempting to do so. Replace the tab as soon as you are done writing to the disk to protect the disk from being written to. Similarly, you can save your own options to the master disk. See chapter 3 "Options". In order to be able to store your own sounds to disk we recommend that you use a new and formatted disk.

Diskette Handling, Formatting & Copying

To avoid causing damage to your master diskette and work diskettes, always handle them gently. Keep them away from magnetic fields (such as loudspeakers), dirt, dust and liquids.

Never touch the exposed section of the disk with your fingers. Always keep your diskettes in their protective envelopes until they are ready to be used.

It is strongly recommended that you protect your valuable disks with the write protect tabs supplied with the disks. The tabs prevent the disk drive from writing to the disk accidentally as a result of an operator error.

Back up your valuable voices by using the copy command described below. All diskettes should be labeled and listed in your notebook so you can keep track of your CZ-Patch voices.

To format a new disk use the "F$" command. This operation will erase any previously recorded data on the disk!

To back up the voices on a work diskette use the "C$" command. You will be asked to insert the source disk (the one with the voices you wish to copy) and hit "Return". Then, after the drive is finished reading the voices you will be asked to insert a new disk (formatted) and hit "Return". Repeat this procedure three times (as instructed on the computer monitor) until the voices on the source disk are all copied onto the new disk.

Note: The CZ-Patch commands are two key commands (double stroke commands). This means that you have to hit the first character first, release it and than hit the second character. Only this sequence will execute the commands.

Saving CZ Internal Voices to Disk

Before getting too deep into this manual we recommend that you save your internal memory voices to disk. This will free up your internal memory space and will allow you to develop more voices.

Use a new and formatted disk. Hit "ND" and then "Return" to log in the new disk and make sure the Group Screen is displayed. If any other display screen is displayed hit "GG" and the Group Screen will be displayed. Now hit "CG" and enter a number between 1 and 16. The square cursor will move to the selected group. Hit "SG" and the CZ internal voices will be transferred into the computer memory and also to disk. You will be prompted for a group name; type in a name up to 16 characters long and hit "RETURN". To display the voices in this group hit "VV". We will discuss these functions in detail in chapter 2, "Using CZ-Patch".

Note that the Group and Author name are blank at this point. Group and Author naming are described in chapter 3 under Edit Commands.

Now that your CZ voices are saved to disk we can start to learn how to use the extensive features of this program. Have a couple of formatted disks handy and proceede to chapter 2. We will learn how to transfer voices and groups from the CZ to CZ-Patch and vice versa. We will also learn to use the utility, edit and print commands. Use the list of commands as a quick reference guide.

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2. Using CZ-Patch

The Display Screens

CZ-Patch uses four display screens:

1. Disk Group Directory: Displays the 16 groups on disk, their sequential number on disk followed by the group name, date and author's name. To display the group directory hit **GG** on the Atari keyboard. A spade to the right of the author's name indicates that this group is protected.

2. Current Disk Group Voice List: Displays the 16 voices residing in the current group buffer (or B0-see below). Use the **"VV"** command to display this screen.

3. The Casio keyboard Screen: Displays the voices stored in the casio keyboard buffer (B1). To display this screen hit **"KK"**. To load the CZ voices into this display use **"UK"**.

4. The Help Screen: On the Help Screen you will find the major commands of CZ-Patch. Use it as a quick reference guide. Hit **HH** to display this screen.

Certain characters do not change on the screen. On the top line the name of the program is displayed (CZ-Patch) followed by the copyright notice. Below that the disk name is displayed which consists of 16 characters or less and can be changed by the user; the author's name (6 characters or less) and the date (9 characters or less). These two can also be changed by the user.

At the bottom left of the screen the current disk group is displayed: The group number followed by the group name. (This is the group name displayed to the right of the highlighted number in the Group Directory.) Below this line you will see the current disk voice: The current disk voice number followed by its name (this name is displayed on the Current Disk Group Voice List next to the highlighted number).

The current Casio voice in the Casio keyboard Buffer (see below) is displayed on the third line at the bottom left of the screen (This number is highlighted on the Casio Screen described above), but no name is displayed. To the right of this number the MIDI Channel number is displayed. This number should match the MIDI Channel number selected on your CZ.

At the bottom right of the screen two of the options are displayed: **TN** (Tones) and **AI** (Auto Increment. They can be either on (highlighted) or off. See chapter 3 "Options" for details.

The **KD** to the right of **AI** represent the Casio CZ keyboard and Atari Disk Drive and indicate disk drive or keyboard activity while transferring data.

The **M=PIC** indicator to the left of **TN** indicates (by a square block cursor) whether CZ-Patch has the Preset, Internal or Cartridge memory selected. When you run CZ-Patch the setting always starts out as Internal.

The Last command entered is displayed at the bottom right of the screen.

The CZ-Patch Buffers

CZ-Patch has eight user buffers, labeled B0, B1, B2, B3, B4, B5, B6 and B7. Each buffer can store 16 CZ voices. By loading eight groups of voices from disk into these buffers (the buffers are part of the computer memory), the user can quickly and easily load one of the eight groups of 16 voices into the CZ internal memory without accessing the disk drive (using the **L0, L1, L2, L3, L4, L5, L6** and **L7** commands).

B0 is the buffer where the group loaded from disk goes to when you use the "**CG**" or "**+G**" or "**-G**" commands (see diagram). It is the Current Group Buffer. This can also be thought of as the Disk Group.

B1 is the Casio Keyboard buffer and is used to view the CZ internal memory voices by using the "**KK**" command to display this buffer and "**UK**" to load the CZ voices into this buffer. Note that you have to assign names to these voices; otherwise the voice names will display as spaces or hearts.

B2, B3, B4, B5, B6 and B7 are additional buffers used to store any 6 disk groups and allow the user to access a great number of voices quickly without waiting for the disk drive to load them.

To transfer groups from B0 to B1, B2, B3, B4, B5, B6 or B7, use the "B1", "B2", "B3", "B4", "B5", "B6" and "B7" commands respectively. The command "AG" will load eight consecutive groups into these buffers, the last group will stay in B0. The first group goes to B1, the second to B2, the third one to B3, the fourth to B4, and so forth. The eighth group is loaded into the Current Group Buffer, B0.

Then, with simple commands, **L0** through **L7** you will be able to load 8 disk groups into the CZ very quickly. Also see chapter 3 "Loading Disk Groups into the CZ Memory". These commands will display the contents of the buffers, respectively. Another way to display the eight buffers is to use the following commands: "K0", "K1", "K2", "K3", "K4", "K5", "K6" and "K7".

Selecting between CZ Internal, Preset and Cartridge Memory use the command **"MP"** to select CZ Preset Memory, **"MI"** to select CZ Internal Memory and **"MC"** to select CZ Cartridge Memory. These commands will change the CZ-Patch screen and will also cause the CZ "Memory" indicators to change. Note that if there is no RAM cartridge inserted in the CZ, attempting to select the Cartridge Memory (with the **"MC"** command) will make the CZ actually select the Preset Memory.

You can only save (not load) the Preset Memory, and you can only save and load The Cartridge Memory if there is actually a cartridge plugged in.

Saving CZ Groups to Disk

In order to save a group to disk, select the group number by using the **"CG"** command followed by the group number. You can also use the **"+G"** or **"-G"** commands. Make sure the group is unprotected (no spade to the right of the group author's name). If you wish to save to a protected group, unprotect it with the **"UP"** command, but remember that the new group will replace the old one.

Hit **"SG"** (Save Group) and the CZ internal (or Preset or Cartridge) voices will be saved to disk onto the current group, and the group line will be highlighted. Make sure you have the memory (Preset, Internal or Cartridge) that you wish to save selected on the CZ-Patch screen.

Enter the new group name up to 16 characters and hit **"Return"**. The new group name will appear in the group directory and will also be saved to disk. The author's name and date will also be saved to disk and appear in the Group Directory. If you wish to protect the new group you have just saved, hit **"PT"** (Protect) and a little spade will appear to the right of the author's name.

Loading Disk Groups into the CZ internal or Cartridge Memory

To load a whole group, select the group number with the "**CG**" (Change Group) or "**+G**" or "**-G**" commands. Wait for the disk drive to finish loading the new group into the computer and then hit "**LG**" (Load Group). The current disk group will quickly replace the 16 voices in internal or cartridge memory, and if the "**AI**" (Auto Increment) option is on (highlighted), the next disk group will be loaded into the computer.

"**AG**" (All Groups) will load 8 disk groups into the 8 user buffers. The first group will be loaded into B1, the next group into B2 and so on, and the last group (eighth) will become the current group and will reside in B0. To load any one of these eight groups into the CZ, hit **L0, L1, L2, L3, L4, L5, L6** or **L7**. This feature allows you to store eight groups of 16 voices each in the computer memory and load them quickly into the CZ Internal memory without accessing the disk drive.

Saving CZ voices to Disk

To save a CZ voice use the "**MP**", "**MI**" or "**MC**" command to select the CZ memory bank and the "**CP**" command (or "**+P**" or "**-P**" commands) to select the CZ patch (or "Tone" in the Casio instruction manual) number on both the CZ-Patch screen (next to "Casio Pr#" at the bottom left of the screen), and on the CZ. Then select the location within the group you wish to save this voice to. First select the disk group as described above under "Saving CZ Groups to Disk". Then display the group voices with the "**VV**" command. Select an empty location using the "**CV**" command and enter the new number. You can also move to the desired location by using the "**+V**" or "**-V**" commands.

Now hit "**SV**" and the CZ voice will be saved to disk. You will need to enter a voice name (up to 16 characters) followed by a "**Return**". Hit "Return" without entering a name to keep the current name unchanged. Make sure the group that you wish to save this voice to is unprotected. Use "**UP**" to unprotect a protected group and remember to re-protect it at the end of your work (With "**PT**").

If you attempt to save a voice to a protected group, the system will hang up. To recover, press the Reset key on the Atari computer. This will not change or erase any voices in the computer or in the CZ.

Loading Disk Voices into the CZ

To load an individual voice into the CZ, select it on the Voice List. You can select the voice with the "**CV**" (Change Voice), with "**+V**" or "**-V**" commands. Then select the CZ memory as described above and the CZ patch (or "Tone"), so that the CZ-Patch display (M=PIC and Casio Pr#) and CZ indicators show the actual CZ voice you want to load.

Now hit "**LV**" (Load Voice) and the current disk voice will be loaded into the select CZ patch number.

If you are not sure you want to write the voice to the CZ memory permanently, you can use the "**TV**" (try voice) command instead of "**LV**". Instead of going to the memory and patch selected on the CZ-Patch screen, the voice will instead be put into a temporary sound memory in the CZ (not the same as Compare/Recall). You can then play on the CZ keyboard to determine if this is a voice you want to load into an Internal or Cartridge location.

To load it into a particular location, use the Write function of the CZ. Otherwise, the voice will be forgotten by the CZ as soon as you change the CZ voice number or hit the Compare/Recall key.

Rearranging the Order of Voices in a Group

To rearrange the order of voices in any group select the Disk Group and use the Casio Keyboard Buffer (B1) to transfer the voices into their new locations. The voices to be transferred should.be selected, one at a time, on the "Group Voice List" and then transferred with the "**BV**" command into the Casio Keyboard Buffer. Note that the location in the Casio Keyboard Buffer has to be selected with the "**CP**" or "**+P**" or "**-P**" commands. The voice will be transferred into the location indicated by the number to the right of "Casio Pr#". When you are done transferring the group voices into their new locations, use the "**SK**" command to save the voices to the same disk group or to any other disk group. Remember to select the disk group before typing "**SK**" and also remember to unprotect the group if applicable.

You can even use this technique to combine voices from different groups into one group. You may find it convenient to have **AI** option on (highlighted), start out with "Casio Pr#" set to 1, and use the "**CG**" and voice selection commands plus "**BV**" to transfer each of 16 voices in order into the Casio Keyboard Buffer.

Using the CASIO Screen

The Casio Keyboard screen allows you to see the voices in the CZ internal memory at any time. Hit **"KK"** and the Casio Keyboard screen will be displayed. To update the Casio Keyboard voices type **"UK"**. The CZ internal voices (or Preset or Cartridge) will be transferred into the Casio Keyboard Buffer (B1), but the voice names will not be changed. You must save the Casio Keyboard Buffer to a disk group and then use the **"EV"** command to change voice names.

The Casio Keyboard screen can be useful when transferring groups from disk to disk as described under "Moving Groups from Disk to Disk".

Moving Groups from Disk to Disk

To move an entire group from disk to disk, load the group into the Casio Keyboard Buffer (B1) by using the **"B1"** command. Note that the group that you wish to copy must already be in the Current Group Buffer (B0). Then , insert the new disk (must be formatted) hit **"ND"** and use the **"SK"** command to save the Casio Keyboard Buffer to the desired group location on the new disk.

Changing Groups and Voices

Changing groups in the Disk Group Directory is done with the **"CG"** command and a number between 1 and 16, or with the **"+G"** or **"-G"** commands. This is done every time you wish to save the CZ voices or the Casio Keyboard Buffer voice to disk. Change the group to the new group you wish to save the CZ voices or the Casio Keyboard Buffer voices to before entering the save command.

Before using the "Load Group" command **"LG"** you have to change the group number as well (as described above). Watch the square cursor move to the new group when you use the group change command.

Similarly, you have to change the disk voice number on the disk group voice list whenever you wish to save a single CZ voice to disk or load a disk voice into the CZ internal memory.

The voice change commands are: **"CV"** or **"+V"** or **"-V"**.

3. Utilities

Options

The following options can be set and saved to your master disk so when you reload your disk you will not have to reset the options.

TN and **AI** are displayed at the bottom right of the screen and can be turned on and off by using the **TN** and **AI** commands respectively. The highlighted characters mean that the function is on. **TN** enables the test tones. These tones are heard when you first power up. You can select 6 different tone patterns by using the **T1**, **T2**, **T3**, **T4**, **T5** and **T6** commands. The system defaults to **T4** when you load your master disk for the first time.

AI (Auto Increment) will load the next group into the computer as soon as it is done loading the current group into the CZ. It will also increment the current disk voice when you load a voice into the CZ. **O3, O4, O5, O6** and **O7** chgange the pitch of the test tones in steps of 1 octave. The system defaults to **O5** when you load the master disk for the first time. **C1, C2, C3**, and **C4** are the 4 color selections available to the user.

These options can be saved to your master diskette by using the **"SO"** command; however, you have to remove the write protect tab in order to do that. Remember to replace the tab as soon as you are done.

The **"AP"** command will play the test tones using all 16 voices in the CZ memory (Preset, Internal or Cartridge) selected.

The **"AV"** command will play the test tones using all 16 voices in the current group. It will leave the CZ memory locations unaltered.

Edit Commands

The edit commands allow you to change the group and voice names, the name of the author, the disk name and the date. These commands will only work with new and formatted disks. If you attempt to use these commands with the master disk, a disk error will result. To recover hit **"ESC"**. It is possible to to write to the master disk by removing the write protect tab, changing any of the above names using the edit commands and replacing the write protect tab.

To name the disk type "**EN**". Enter the new name and hit "**Return**". The new disk name will apper at the top of the screen.

If you save a group and then realize the group author or date was incorrect, use "**EE**" to change the group date and "**EQ**" to change the group author (for the current group).

To change the author's name use the "**EA**" command. Enter the new name from the Atari keyboard and hit "**Return**". The new name will appear at the top of the screen.

Similarly, use "**ED**" to change the date.

"**EG**" will allow you to name a group. The new name will appear on the current group line (highlighted) in the Disk Group Directory.

Disk Utility Commands

It is important to format every new disk that you intend to use for data storage. See disk handling and formatting for details. Formatting a new disk is done with the "**F$**" command. You will be asked to insert the new disk and hit "**Return**". The formatting process takes a few seconds after which your disk will be ready to accept data. You can format a used disk; one that has voices or any type of data on it, but you will lose all that information. Make sure the write protect tab is off if you wish to format a used disk and most importantly, make sure there is no valuable information on the disk before you start formatting it.

To copy the voices on a disk (in all 16 groups) onto another disk use "**C$**". You will be asked to insert the source disk and hit "**Return**". After a few seconds you will be asked to remove the source disk and insert the destination disk (must already be formatted). After 3 passes all voices on the source disk will be copied onto the new disk.

Note: This operation will not copy the CZ-Patch program itself, only the voices, because the CZ-Patch program is copy protected.

Whenever you switch to a new disk use "**ND**" (New Disk) to log in the new disk. You will not be able to access any voices or store CZ voices to the new disk before initializing it with this command

To save your options ("**AI**" on or off, "**TN**" on or off, the screen colors, the test note pattern and the octave) onto the master disk remove the write protect tab, insert the disk into the disk drive, set the options the way you would like them to work every time you boot the master disk and hit "**SO**". Your new options will be written to the master disk. Remove the disk and replace the write protect tab.

To protect a disk group select the group number and hit "**PT**". A little spade will appear next to the author's name on the group list. You will not be able to store voices or groups to a protected group. A "Group Protected!" message will warn you of a protected group should you attempt to do so. To recover hit the "**Reset**" key on the computer and then the space bar twice.

To unprotect a group use "**UP**". The little spade on the selected group line will disappear and you will be able to store voices and entire groups to this disk group.

Note: The CZ-Patch master disk is shipped with its groups protected. You will not be able to unprotect them unless you remove the write protect tab. We recommend that you use a new disk to save voices to.

The Print Commands

To use these commands you must have a printer connected to the serial I/O port of your Atari systems. The MIDIMATE, in this case, can be connected to the free I/O port on your printer. You can use a printer that works with the Atari 850 interface or any direct connect printer designed to work with the Atari personal computer.

A "**PG**" command will print a list of the 16 disk groups (Group Directory).
"**PV**" will print a list of the current group voices (the 16 voices residing in B0).
"**PH**" will print the same list horizontally.
To print a list of all voices in all groups (vertically), use "**PL**". To print the same list horizontally use "**PW**".

List of Commands

Using the CZ-Patch Commands

All of the following commands consist of two characters (alpha numeric). Enter these characters from the Atari keyboard one at a time. There is no need to use the Shift and/or Control keys. Most of the command names (in bold letters) are self explanatory. The diagram will help you understand the main building blocks of CZ-Patch and the CZ keyboard and how groups and voices are transferred within the system. The main commands are listed in the diagram (page 22).

Note: In the following commands, B0, B1, B2, B3, B4, B5, B6 and B7 refer to buffers 0, 1, 2, 3, 4, 5, 6 and 7 respectively.

GROUP TRANSFERS

LG - **LOAD GROUP** - Loads the disk group into the CZ memory (from B0 to CZ memory). If AI is on, Increments the disk group (the next disk group is loaded into B0).

SG - **SAVE GROUP** - Saves the CZ 16 voices to the current disk group (goes into B0 and also to disk).

SK - **SAVE KEYBOARD** - Tranfers the sounds in the Casio Keyboard buffer (B1) to the current disk group buffer (B0 or disk view) and to disk.

UK - **UP KEYBOARD** - Loads the CZ voices into the Casio Keyboard buffer (B1).

B1 - **BUFFER 1** - Transfers the contents of the current disk group buffer (B0) into buffer 1 (B1).

B2 - **BUFFER 2** - Transfers the contents of the current disk group buffer (B0) into buffer 2 (B2)

B3 - **BUFFER 3** - Transfers the contents of the current disk group buffer (B0) into buffer 3 (B3).

B4 - **BUFFER 4** - Transfers the contents of the current disk group buffer (B0) into buffer 4 (B4).

B5 - **BUFFER 5** - Transfers the contents of the current disk group buffer (B0) into buffer 5 (B5).

B6 - **BUFFER 6** - Transfers the contents of the current disk group buffer (B0) into buffer 6 (B6).

B7 - **BUFFER 7** - Transfers the contents of the current disk group buffer (B0) into buffer 7 (B7).

L0 - **LOAD 0** - Loads the contents of buffer 0 into the CZ memory. Same as **LG** but no Auto Increment Logic.

L1 - **LOAD 1** - Loads the contents of buffer 1 into the CZ memory.

L2 - **LOAD 2** - Loads the contents of buffer 2 into the CZ memory.

L3 - **LOAD 3** - Loads the contents of buffer 3 into the CZ memory.

L4 - **LOAD 4** - Loads the contents of buffer 4 into the CZ memory.

L5 - **LOAD 5** - Loads the contents of buffer 5 into the CZ Memory.

L6 - **LOAD 6** - Loads the contents of buffer 6 into the CZ memory.

L7 - **LOAD 7** - Loads the contents of buffer 7 into the CZ memory.

L8 - **LOAD 8** - Same as **L0**. There is no real buffer 8, but since B0 is the last buffer transferred to, it can also be thought of as B8, if you find that more convenient.

AG - **ALL GROUPS** - Fills all buffers current to B1, next current to B2, etc. The last group resides in B0.

VOICE TRANSFERS

LV - **LOAD VOICE** - Loads the current disk voice into the CZ memory. If **AI** is on, increments the current disk voice.

SV - **SAVE VOICE** - Transfers the CZ memory voice, displayed to the right of "CASIO PR#" into the current disk group buffer (B0) into the highlighted location. Increments the current disk voice if AI is on.

BV - Transfers the current disk voice into the Casio Keyboard buffer (B1) into the patch number displayed to the right of "CASIO PR#.

SP - Transfers the patch number displayed to the right of "CASIO PR#" in the Casio Keyboard buffer (B1) to the current disk buffer (B0) into the current voice and saves it to disk.

TV - **TRY VOICE** - Loads the current disk voice into the CZ temporary sound memory. If AI is on, increments the current disk voice.

AV - **ALL VOICES** - Transfers the current disk group (B0), one voice at a time into the CZ temporary sound memory. Used primarily to listen to the current disk group voices.

GROUP AND VOICE CHANGES

CG - **CHANGE GROUP** - Changes the current disk group number (the highlighted number on the group list. Enter the new disk group number (1 through 16) manually.

+G **+ GROUP** Increments the disk group number.

-G **- GROUP** Decrements the disk group number.

CV - **CHANGE VOICE** - Changes the current disk voice number (the highlighted number on the voice list). Enter the new voice number (1 through 16) manually.

+V **+ VOICE** Increments the current disk voice number.

-V **- VOICE** Decrements the current disk voice number.

PATCH, CZ MEMORY AND MIDI CHANNEL CHANGES

CP - **CHANGE PATCH** - Changes the patch (voice) number on the CZ and in the Casio Keyboard buffer (B1). Enter the new number manually. If **TN** is on, plays the selected test tones using the new selected voice.

+P **+ PATCH** Increments the patch (voice) number on the CZ and in the Casio Keyboard buffer (B1). If **TN** is on, plays the test tones using the new voice.

-P **- PATCH** Decrements the patch (voice) number on the CZ and in the Casio Keyboard buffer (B1). If **TN** is on, plays the test tones using the new voice.

AP - **ALL PATCHES** - Plays all 16 voices in the CZ memory whether TN is on or off.

MP - **MEMORY PRESET** - Selects the Preset Memory on the CZ.

MI - **MEMORY INTERNAL** - Selects the Internal Memory on the CZ.

MC - **MEMORY CARTRIDGE** - Selects the Cartridge Memory on the CZ.

CM - **CHANGE MIDI** - Changes the MIDI channel number. Enter a number manually   .
(1 through 16).

+M **+ MIDI** Increments the MIDI channel on the CZ.

-M **- MIDI** Decrements the MIDI channel on the CZ.

AM - **ALL MIDI** - Goes through all 16 MIDI channels.

SCREEN DISPLAY COMMANDS

GG - Displays the disk group directory (16 disk groups).

VV - Displays the current disk group voices (16 B0 voices).

KK - Displays the Casio Keyboard buffer (B1) voices.

HH - Displays the help screen.

RETURN - Alternates GG/VV.

K0 - Displays the contents of Buffer 0.

K1 - Displays the contents of Buffer 1.

K2 - Displays the contents of Buffer 2.

K3 - Displays the contents of Buffer 3.

K4 - Displays the contents of Buffer 4.

K5 - Displays the contents of Buffer 5.

K6 - Displays the contents of Buffer 6.

K7 - Displays the contents of Buffer 7.

OPTIONS

AI - **AUTO INCREMENT** - Turns the auto increment mode on or off.

TN - **TEST TONES** - Turns the test tone mode on or off.

T1 - **TONE 1** - Uses tone pattern 1

T2 - **TONE 2** - Uses tone pattern 2

T3 - **TONE 3** - Uses tone pattern 3

T4 - **TONE 4** - Uses tone pattern 4. (default).

T5 - TONE 5 - Uses tone pattern 5

T6 - **TONE 6** - Use tone pattern 6

O3 - **OCTAVE 3** - Uses tone octave 3

O4 - **OCTAVE 4** - Uses tone octave 4

O5 - **OCTAVE 5** - Uses tone octave 5 (default).

O6 - **OCTAVE 6** - Uses tone octave 6.

O7 - **OCTAVE 7** - Uses tone octave 7.

C1 - **COLOR 1** - First set of screen colors.

C2 - **COLOR 2** - Second set of screen colors.

C3 - **COLOR 3** - Third set of screen colors.

C4 - **COLOR 4** - Fourth set of screen colors.

UTILITIES

F$ - **FORMAT** - Formats disk in drive 1.

C$ - **COPY** - Copies disk.

ND - **NEW DISK** - Logs in new disk.

SO - **SAVE OPTIONS** - Saves options to master disk.

D1 - **DISK 1** - Selects drive 1.

D2 - **DISK 2** - Selects drive 2.

PT - **PROTECT** - Protects current disk group.

UP - **UNPROTECT** - Unprotects current disk group.

PRINT COMMANDS

PG - **PRINT GROUP** - Prints a list of the 16 disk groups.

PV - **PRINT VOICES** - Prints a list of the current group voices (16 voices in B0).

PH - **PRINT HORIZONTALLY** - Prints voices horizontally (B0 voices)

PL - **PRINT LONG** - Prints a list of all voices in all 16 disk groups.

PW - **PRINT WHOLE** - Prints a list of all disk voices in all groups in a horizontal format

EDIT COMMANDS

EN - **EDIT NAME** - Edits disk name.

EG - **EDIT GROUP** - Edits current disk group name.

EV - **EDIT VOICE** - Edits the current disk voice.

EA - **EDIT AUTHOR** - Edits the disk author's name.

ED - **EDIT DATE** - Edits the disk date.

EQ - Edits the group author's name.

EE - Edits the group date.

Glossary of Terms

Auto increment - Increments the current disk group or the current disk voice whenever a group or voice is transferred to and from the CZ memory.

Bit - The smallest unit of digital information. A bit is 1 or 0, high or low, true or false.

Buffer - A section in computer RAM that is used to store information temporarily until it is used later. B0 through B7 in CZ patch are buffers that contain one group of 16 voices each.

Byte - 8 bits. A byte is the basic unit of data that the Atari uses. A CZ voice is 128 bytes or 1024 bits.

Casio Keyboard Buffer - B1 in the computer memory. Used to rearrange voices within a group, to move groups between disks, and also as an additional buffer so that eight groups of voices can be quickly loaded into the CZ memory.

Channel - (MIDI channel) Part of the MIDI specification. There are MIDI channels 1 through 16. MIDI channels are used to selectively address synthesizers tied into a MIDI chain.

Compare/Recall Area - A buffer in the CZ where voices are edited. Not accessible via MIDI and therefore not used by CZ-Patch.

Current Disk Group - One of the 16 disk groups that is loaded to buffer 0 (highlighted in the disk group directory).

Current Disk Voice - The highlighted voice in the current disk group voice directory (VV).

Decrement - Subtract one unit.

Disk Group - 16 voices stored on a disk as a "group". (See definition of Group).

Diskette - Also called disk or floppy disk or just floppy. Used for storage of data

Disk Voice - The current voice (stored on disk) that can be loaded into the CZ internal memory...

Formatting - Laying down sectors onto a floppy disk. New soft sectored disks (the ones used by CZ-Patch) come unformatted.

Group - 16 voices grouped together. CZ-Patch has 16 groups of 16 voices each that can be stored on one side of a disk. The Disk Group Directory screen displays the 16 groups.

Increment - Add one unit.

Load - Transferring a group of voices or individual voices from the 8 buffers into the CZ memory.

MIDI - Musical Instrument Digital Interface. The standard that makes musical instruments work with each other and with computers possible.

Patch - Same as voice. A specific sound generated by an electronic keyboard.

RAM - Random Access Memory. This is the internal computer memory, used to store information while the computer is on. All the new Atari computers have 64K bytes or 128K bytes (about 65,000 bytes or 130,000 bytes).

Save - Transferring a group of voices from the CZ memory into the computer buffer #0 (B0) and onto disk.

Software - What CZ-Patch is. Just a bunch of zeroes and ones that tell the hardware what to do. MIDIMATE is hardware.

Temporary Sound Memory - A buffer within the CZ where the sound being played is stored. When a CZ voice is selected, it goes into the temporary sound memory. Not to be confused with Compare/Recall Area.

Test Tones - Used to test the CZ voices (by activating the audio output of the CZ).

Tone - Used by Casio for "sound", "patch", or "voice, selected from Preset, Internal or Cartridge memory or from the Compare/Recall Area.